

fastening of the band provide the Velcro releasable fastening of the band portion 66a in its wrap-around condition shown in FIG. 9.

As may be seen from FIG. 9, the extension 66b extends along a spiral or helix from the component 14 up to the upper band 60. At its free end, the extension 66b carries at its inside a pile section 74 adapted to be pressed against the section 76 of relatively stiff loops, to provide a releasable Velcro Connection between the top end of the extension 66b and the upper band 60. Thus, the fastening component 76 is inclined so as to extend along the spiral path occupied by the upper end region of the extension 66b which carries the fastening component 74 which coacts with the fastening component 76.

The above-described structure of FIGS. 8 and 9 is shown mounted on a left leg in FIGS. 10-13 which respectively illustrate the structure as seen at the inside of the left leg, at the front of the left leg, at the outside of the left leg, and at the rear of the left leg. Thus, FIG. 10 shows the joint-engaging component 40 at the inside of the leg with the relatively stiff brace member 34 shown extending forwardly along the inside of the leg and then around the front thereof (FIG. 11) to terminate at the lower component 14 which is visible in FIG. 12 at the outside of the leg below the knee thereof. It is to be noted that while the band portion 66a is wrapped around the lower leg region in the manner shown in FIGS. 10-13 with the component 14 situated between the layers of the band portion 66a, the extension 66b extends from the component 14 and remains directly in engagement with the leg between the latter and the bar 34, in the manner shown most clearly in FIG. 11. Thus, in this case a part of the band 66 forms a leg-engaging surface for the component 14. In other words that part of the band 66 which is fixed to and overlaps the component 14 at the inside thereof directly engages the leg and forms part of the component 14. This is the part which is contained within the dotted area shown in FIG. 9 as the outline of component 14. As is apparent from FIG. 13, the wrap-around portion 66a of the band 66 terminates at the rear of the leg just beyond the component 14 at the outside of the left leg.

In contrast with the lower band portion 66a, the upper band 60 is connected to the outside of the component 12 and extends over the upper relatively stiff bar 32 of the brace so as to cover this bar as well as the component 12, and the band 60 is wrapped around the upper limb region and terminates at the location where the rear of the leg merges into the inside of the leg.

As a result the inclined fastening component 76 extends upwardly across the rear of the leg and then to the outside thereof, so that the extension 66b of the band 66 will be fastened to the upper band 60 in the manner shown in FIGS. 12 and 13 at the outside and rear of the leg respectively.

The joint-engaging component 40 as fixed to its upper and lower end regions, as by rivets or the like, a pair of encircling straps 80 and 82 which take the form of substantially non-stretchable webbing terminating in buckles for adjustable connection of the bands in a condition extending around the leg at the joint region thereof. The upper encircling band 80 shown in FIG. 8 has a portion 80a extending in one direction from the component 40 and a portion 80b extending in the opposite direction therefrom. In the same way the lower 82 has a portion 82a extending in one direction from the component 40 and a portion 82b extending in the opposite direction therefrom. The portions 80b and 82b respectively terminate in buckles 84 and 86 adapted to receive the free ends of the portions 82a and 80a of the bands 82 and 80, these portions being formed with openings through which the swingable pin of each buckle is adapted to extend. Thus, it will be seen that the band portion 80a is inclined downwardly around the joint region to be fastened to the buckle 86 carried by the band portion 82b, while the band portion 82a is inclined upwardly around the joint region to be fastened to the buckle 84. In the manner which is shown most clearly in FIGS. 12 and 13, in the illustrated arrangement the band portion 82a extends over the band portion 80a while crossing the latter.

Moreover, it is to be noted that these band portions 80 and 82 are initially fastened when the brace is placed on the leg, so that thereafter the extension 66b extends spirally around the leg between the upper and lower bands 60 and 66 in the manner described above and as shown most clearly in FIGS. 12 and 13. It is to be noted that the stretched extension 66b which extends spirally at least part of the way around the leg between the upper and lower bands exerts a force which tends to immobilize the leg with respect to possible twisting thereof around a vertical axis, so that this band structure contributes to the limiting of the free swinging movement of the leg at the joint to the single axis which coincides with the common axis of the pivots 24 and 46. The remaining parts of the band structure will also contribute to this result, and an exceedingly effective and highly reliable positioning of the brace 10 on the leg, without possible shifting of the brace undesirably from the position in which it is initially placed on the leg, is achieved with this construction.

What is claimed is:

1. A brace for limiting a pair of limbs which are articulated to each other at a joint therebetween to swinging movement at the joint only about a single axis, comprising a pair of limb-engaging components to be located on the same side of the limbs in engagement therewith beyond the joint therebetween, a pair of arms respectively fixed to and extending from said pair of components, said arms respectively terminating in end regions situated distant from said components, first pivot means interconnecting said arms at said end regions thereof for swinging movement one with respect to the other about an axis which will coincide with the single axis to which the swinging movement of the limbs is to be limited, a joint-engaging component for engaging the joint between said limbs at a side of said limbs opposite from the side thereof engaged by said pair of said components, a pair of relatively stiff, curved members respectively fixed to said pair of limb-engaging components to extend therefrom around the pair of limbs to the side of the latter opposite from said pair of components, said members respectively terminating in end regions located adjacent said joint-engaging component, and second pivot means interconnecting said joint-engaging component and said end regions of said members for free swinging movement relative to each other about said axis which is to coincide with the single axis, whereby the limbs will be free to swing about the latter single axis while being prevented from swinging about any other axis, said joint-engaging component being supported exclusively by said second pivot means and said pair of curved members, so that the only connection between said pair of limb-engaging components and said joint-engaging component is through said curved members and second pivot means.

2. A brace for limiting a pair of limbs which are articulated to each other at a joint therebetween to swinging movement at the joint only about a single axis, comprising a pair of limb-engaging components to be located on the same side of the limbs in engagement therewith beyond the joint therebetween, a pair of arms respectively fixed to and extending from said pair of components, said arms respectively terminating in end regions situated distant from said components, first pivot means interconnecting said arms at said end regions thereof for swinging movement one with respect to the other about an axis which will coincide with the single axis to which the swinging movement of the limbs is to be limited, a joint-engaging component for engaging the joint between said limbs at a side of said limbs opposite from the side thereof engaged by said pair of said components, a pair of relatively stiff, curved members respectively fixed to said pair of limb-engaging components to extend therefrom around the pair of limbs to the side of the latter opposite from said pair of components, said members respectively terminating in end regions located adjacent said joint-engaging component, and second pivot means interconnecting said joint-engaging component and said end regions of said members for free swinging movement relative to each other about said axis which is to coincide with